Catalogue of American Amphibians and Reptiles.

Russell, A.P. and A.M. Bauer. 1991. *Anolis garmani.*

Anolis garmani Stejneger
Jamaican Giant Anole

Lacerta bullaris: Linné, 1758:208.
Anolis bimaculatus: Daudin, 1802:55 (part).
Anolis Edwardsii: Griffith and Pidgeon, 1831:228 (*not* of Merrem, 1820). See Nomenclatural History.
Anolis equestris: de la Sagra, 1838:76 (part).
Dactyloa Edwardsii: Gray, 1840:111 (part).
Ctenonotus Edwardsii: Fitzinger, 1843:64.
Eupristis Edwardsii: Cope, 1861 (1862):215.
Anolis garmani Stejneger, 1899:602. Type-locality, "Jamaica". Holotype not designated, collector and date of collection unknown. See Nomenclatural History.
Anolis garmanii: Barbour, 1910:275.
Norops garmani: Schwartz and Henderson, 1988:153.

• **Content.** No subspecies are currently recognized.

• **Definition.** This species is a member of the *Anolis grahami* series (Williams, 1976). This robust anole is the largest of the Jamaican species. Males average 100 mm SVL (Grant, 1940), but may reach 131 mm (Schwartz and Henderson, 1991) with a tail length of 250 mm (Underwood and Williams, 1959). Mature females average 80 mm SVL, with a tail length of about 160 mm (Underwood and Williams, 1959). The dorsal scales are swollen and keeled, with a distinct middorsal crest in males (vestigial or absent in females) extending onto the tail. Ventral scales are smooth or very slightly keeled and approximately equal in size to the dorsals. The body is normally predominantly bright emerald green, but individuals may exhibit color phases that are uniformly near black or typified by pale lateral stripes or spots (more prominent in males). The venter is greenish-white. Males have a greenish-yellow dewlap with an orange center. The dewlap is rudimentary and inconspicuous in females.

• **Diagnosis.** *Anolis garmani* may be distinguished from other Jamaican anoles by its large size, emerald green to black coloration, and orange and green dewlap pattern.

• **Descriptions.** Detailed descriptions are given by Grant (1940), Underwood and Williams (1959), and Schwartz and Henderson (1991).

• **Illustrations.** A color photograph and line drawing were furnished by Obst et al. (1988) and a color illustration of the head and forebody of *A. garmani* was provided by Schwartz and Henderson

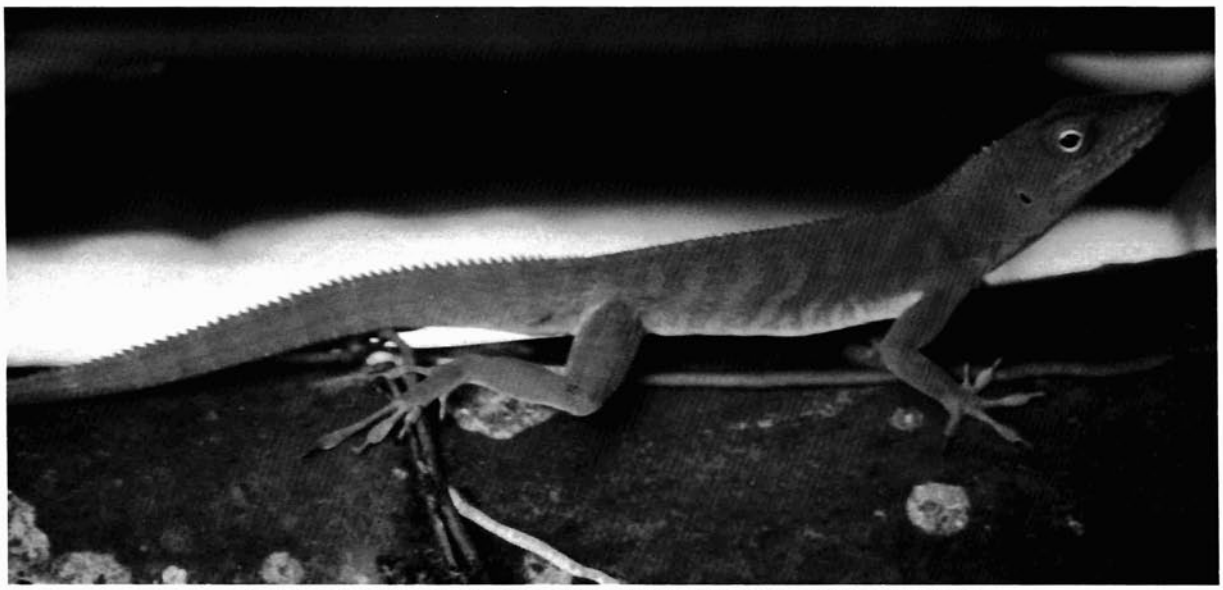
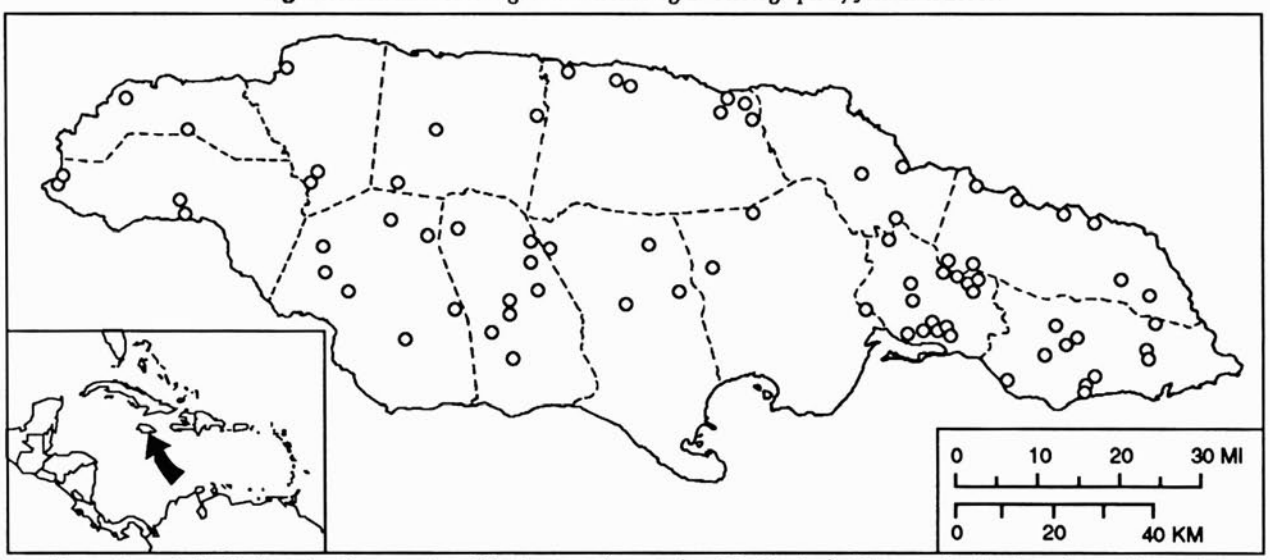


Figure. Adult male *Anolis garmani* from Negril. Photograph by Jonathan Losos.



Map. Open circles indicate locality records within the natural range (see Distribution). The type locality is too imprecise to plot.

(1985). A color photograph of the species during ecdysis is presented by Ashton and Ashton (1985), and Krintler (1985) provided color portraits of an adult male, an adult female, and a juvenile. Black and white photographs of the entire animal and scalation are included in Wilson and Porras (1983) and Underwood and Williams (1959), respectively. Trivers (1976) provided a black and white photograph of a copulating pair. A photograph of eggs is given by Krintler (1985). Forsgaard (1983) illustrated representative vertebrae and Gorman and Atkins (1968) illustrated the karyotype (2n = 30).

• **Distribution.** *Anolis garmani* is native to Jamaica. It occupies elevations from sea level to ca. 1200 m throughout mainland Jamaica, although few records exist for the south-central regions of the island. Among Jamaican *Anolis* it appears to be the most circumscribed by particular ecogeographic conditions (Underwood and Williams, 1959), but may be locally abundant. It prefers mesic habitats and is arboreal, often being found high in the canopy. *Anolis garmani* has been introduced to Grand Cayman Island and to the Miami, Florida area where it has persisted since 1975 (Wilson and Porras, 1983).

• **Fossil Record.** None.

• **Pertinent Literature.** The most comprehensive systematic treatment is that of Underwood and Williams (1959). Along with Grant (1940), these authors also summarized the general biology of this species. Williams (1969, 1976), Guyer and Savage (1986), and Hedges and Burnell (1990) discussed the phylogeny and biogeography of *A. garmani* with respect to other anolines. Shochat and Dessauer (1981) and Gorman et al. (1984) provided immunological information, and Gorman and Atkins (1968) and Gorman (1973) discussed karyology. Gorman et al. (1971) considered the systematic value of serum albumin and lactic dehydrogenase. Important ecological contributions include those of Barbour (1910), Rand (1967a, b), Schoener (1970), Schoener and Schoener (1971), Williams (1972, 1983), Trivers (1976), and Williams and Rand (1977). Haefner (1988) employed these basic data in an analysis of the assembly rules of Jamaican anoline communities. Losos (1990a, b) studied the coevolution of ecological, morphological, and behavioral attributes of members of West Indian *Anolis* communities, including *A. garmani*. Arnold and Wade (1984) used Trivers' (1976) data to examine selection. Blood parasite infections of *A. garmani* were discussed by Telford (1975). Lefcourt and Blaustein (1991) used data on intestinal parasite infections from Bundy et al. (1987) to test the Hamilton and Zuk hypothesis. Krintler (1985) outlined reproduction and feeding under captive conditions. McFarlane and Garrett (1989) reported predation by owls. Russell (1988) included *A. garmani* in a comparative study of limb musculature in lizards.

• **Nomenclatural History.** Stimson and Underwood (1983) provided evidence to suggest that *Lacerta bullaris* Linné 1758 was based on a figure of *A. garmani* in Catesby (1743) under the name *Lacerta viridis jamaicensis*. Savage and Guyer (1991) have argued that recognition of *bullaris* as a senior synonym of *garmani* would serve only to disrupt stable nomenclature.

Anolis garmani was long confused with what is now known as *Anolis bimaculatus*, and to a lesser extent with *A. equestris*. Sloane (1725) first figured *A. garmani* as "*Lacertus major e viridi cinereus, dorso crista breviore donato*". The animal described was incorrectly identified as *A. equestris* by de la Sagra (1838) and later authors. Merrem (1820) erected *A. Edwardsii* for an animal described and figured by Edwards (1758) from the island of Nevis. Stejneger (1899) demonstrated that subsequent usages of this name were generally applied to *A. garmani*, the first by Griffith and Pidgeon (1831). The later combinations *Dactyloa Edwardsii* (Gray, 1840), *Ctenonotus Edwardsii* (Fitzinger, 1843) and *Eupristis Edwardsii* (Cope, 1861 [1862]) refer in whole or in part to *Anolis garmani* as well. Daudin (1802) included *A. garmani* as a variety of *A. bimaculatus*, the senior synonym of *A. edwardsii*.

• **Etymology.** The specific epithet is a patronym honoring Samuel W. Garman (1843-1927), then curator of the herpetological collections at the Museum of Comparative Zoology, Harvard University, and a long-time student of West Indian herpetology.

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